

**GAME WARDENS' AND PEACE OFFICERS'
RETIREMENT SYSTEM
of the
STATE OF MONTANA**

**ACTUARIAL VALUATION
as of June 30, 2005**

Prepared by

Mark O. Johnson, F.S.A.
Consulting Actuary



Milliman

Consultants and Actuaries

111 SW Fifth Avenue, Suite 3700
Portland, OR 97204
Tel +1 503 227.0634
Fax +1 503 227.7956
www.milliman.com

October 4, 2005

Retirement Board
Game Wardens' and Peace Officers' Retirement System
State of Montana

Dear Members of the Board:

At your request, we have completed an actuarial valuation of the Game Wardens' and Peace Officers' Retirement System as of June 30, 2005. Details about the actuarial valuation are contained in the following report.

I certify that the information included in this report is complete and accurate to the best of my knowledge and belief. All calculations have been prepared in accordance with generally recognized and accepted actuarial principles and practices that are consistent with the applicable Standards of Practice adopted by the American Academy of Actuaries.

Milliman has been engaged by MPERA as an independent actuary. The undersigned is a Fellow of the Society of Actuaries, a Member of the American Academy of Actuaries, and an Enrolled Actuary, and is experienced in performing actuarial valuations for large public employee retirement systems.

Actuarial computations presented in this report are for purposes of analyzing the sufficiency of future contributions. Actuarial computations under GASB Statement No. 25 are for purposes of fulfilling financial accounting requirements. The computations in this report have been made on a basis consistent with our understanding of the Retirement Board's funding policies and GASB Statement No. 25. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, different determinations may be needed for other purposes.

Any distribution of this report must be in its entirety, including this cover letter, unless prior written consent is obtained from Milliman.

Respectfully submitted,

Mark O. Johnson, F.S.A., M.A.A.A., E.A.
Principal and Consulting Actuary

MOJ:dap

MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2005

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MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
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ACTUARIAL CERTIFICATION

To the best of our knowledge and belief, this report is complete and accurate and contains sufficient information to fully and fairly disclose the funded condition of the Game Wardens' and Peace Officers' Retirement System as of June 30, 2005.

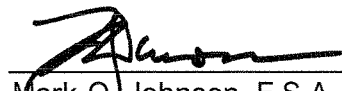
In preparing the valuation, we relied upon the financial information, membership data, and benefit provisions furnished by the System. Although we did not audit this data, we compared the data for this and the prior valuation and tested for reasonableness. Based on these tests, we believe the data to be sufficiently accurate for the purposes of our calculations. It should be noted that if any data or other information is inaccurate or incomplete, our calculations may need to be revised.

The Retirement Board has sole authority to determine the actuarial assumptions and methods used for the valuation of the System. The Board adopted all of the actuarial methods and assumptions used in the 2005 valuation.

The findings have been determined according to actuarial assumptions and methods that were chosen on the basis of recent experience of the System and of current expectations concerning future economic conditions. In our opinion, the assumptions used in the actuarial valuation are appropriate for purposes of the valuation, are internally consistent, and reflect reasonable expectations. The assumptions represent our best estimate of future conditions affecting the System. Nevertheless, the emerging costs of the System will vary from those presented in this report to the extent that actual experience differs from that projected by the assumptions.

The actuarial valuation was prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the applicable Standards of Practice adopted by the Actuarial Standards Board of the American Academy of Actuaries. In addition, the assumptions and methods used meet the parameters set for disclosures by Governmental Accounting Standards Board Statement No. 25.

The undersigned is an independent actuary, a Fellow of the Society of Actuaries, a Member of the American Academy of Actuaries, an Enrolled Actuary, and experienced in performing valuations for large public employee retirement systems.



Mark O. Johnson, F.S.A., M.A.A.A., E.A.
Principal and Consulting Actuary

MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2005

SECTION 1
SCOPE OF THE REPORT

This report presents the results of our actuarial valuation of the System as of June 30, 2005.

A summary of the findings resulting from this valuation is presented in Section 2 of the report and the underlying calculations are summarized in more detail in Section 3.

All of the calculations of the valuation were carried out using certain assumptions as to the future experience of the System in matters affecting the actuarial cost. Section 4 summarizes the most important of these assumptions and describes the actuarial methods used to calculate costs.

Section 5 outlines the benefit provisions of the System. We understand there have been no changes to the Game Wardens' and Peace Officers' Retirement System since our last valuation.

The membership data which were supplied to us are summarized in Section 6.

MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2005

SECTION 2
SUMMARY OF FINDINGS AND ANALYSIS OF THE FUNDING LEVEL

The costs of a retirement system are not determined by the actuary. The ultimate costs of a system are determined by adding all of the benefits and expenses that are paid, and subtracting all investment earnings. These costs cannot be determined exactly until the last member or beneficiary has received the final benefit payment due.

The purpose of an actuarial valuation is to provide a timely best estimate of the ultimate costs in order to allocate them to the appropriate generation of members and taxpayers. The ideal goal is for contributions to remain essentially a constant percentage of covered payroll as long as the assumptions and methods reflect the emerging experience of the system and its members with reasonable accuracy.

MEMBERSHIP DATA

We have developed the following comparisons between the membership in this and the prior actuarial valuations.

	<u>June 30, 2005</u>	<u>June 30, 2004</u>
Number of Members		
Retirees and Beneficiaries	94	85
Vested Terminated	22	18
Non-vested Terminated	81	95
Active	<u>711</u>	<u>685</u>
Total Membership	908	883

More detailed membership statistics are shown in Section 6.

DETERMINATION OF NORMAL COST

The **Normal Cost** represents the cost assigned to an average member for a given year such that it would meet the continuing costs of that particular benefit, if contributed each year starting with the date of membership. The Entry Age Actuarial Cost Method is designed to produce a Normal Cost that remains a level percentage of salaries, so it is best expressed as a rate.

The following chart shows the Normal Cost from the 2004 valuation compared to the Normal Cost in this valuation. **TABLE 1** provides more details on the Normal Cost.

MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2005

	<u>2005 Actuarial Valuation</u>	<u>2004 Actuarial Valuation</u>
Normal Cost Rate		
Service Retirement	10.79%	10.76%
Disability Retirement	0.70	0.71
Death	1.12	1.13
Withdrawal	<u>5.95</u>	<u>5.94</u>
Total Normal Cost Rate	18.56%	18.54%

The Normal Cost Rate is expected to remain fairly stable as long as the benefits are not amended, experience emerges as assumed, the demographic characteristics of the membership remain reasonably consistent, and the actuarial assumptions are not changed.

DETERMINATION OF THE ACTUARIAL LIABILITY

The next step in the actuarial valuation process is to project all future benefit payments from the System for current members and retirees. The level of benefits currently being paid is known, but assumptions are needed to estimate how long they will be paid, and the amount and timing of the payment of future benefits for active and inactive members who are not currently receiving payments.

The summation of the discounted values of all of the projected benefit payments for all current members, at the assumed rate of return, is called the **Actuarial Present Value of Projected Benefits**. Details are shown in **TABLE 2** and summarized below.

(\$000)	<u>2005 Actuarial Valuation</u>	<u>2004 Actuarial Valuation</u>
Actuarial Present Value of Projected Benefits		
Retired Members	\$ 18,537	\$ 16,912
Inactive Members	1,062	1,122
Active Members	<u>71,398</u>	<u>65,522</u>
Total Value of Projected Benefits	\$ 90,997	\$ 83,556

The **Actuarial Present Value of Future Normal Costs** is the value of all remaining Normal Costs expected to be received over the future working lifetime of current active members. The Actuarial Present Value of Future Normal Costs is subtracted from the Actuarial Present Value of Projected Benefits to arrive at the **Actuarial Liability**, the assets that would exist if the current Normal Cost Rate had been paid for all members since entry into the System, and if all actuarial assumptions had been realized. The following is a summary from **TABLE 2**.

MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2005

(\$000)	2005 Actuarial Valuation	2004 Actuarial Valuation
Actuarial Present Value of:		
Projected Benefits	\$ 90,997	\$ 83,556
Future Normal Costs	<u>34,583</u>	<u>33,246</u>
Actuarial Liability	\$ 56,414	\$ 50,310

DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS

The next step in the valuation process is to calculate the **Actuarial Value of Assets** that will be used to determine the funding status of the System. The market value of assets was reported to us as of June 30, 2005. However, because the underlying calculations in the actuarial valuation are long-term in nature, it is advantageous to smooth out short-term fluctuations in the market value of assets.

The asset smoothing method projects an Expected Value of Assets using the assumed rate of investment return, then recognizes the difference between the Expected Value and the Market Value over a four-year period. The calculation of the Actuarial Value of Assets is shown in **TABLE 3** and summarized below.

(\$000)	Gain or (Loss)	Reserve Factor	Smoothing Reserve	Value of Assets
Market Value on June 30, 2005				\$ 51,826
2002-03	\$ (179)	25%	\$ (45)	
2003-04	1,941	50%	971	
2004-05	(82)	75%	<u>(61)</u>	
Smoothing Reserve			\$ 865	<u>(865)</u>
Actuarial Value of Assets				\$ 50,961

UNFUNDED ACTUARIAL LIABILITY OR ACTUARIAL SURPLUS

The **Unfunded Actuarial Liability** is the excess of the Actuarial Liability over the Actuarial Value of Assets, which represents a liability that must be funded over time. Contributions in excess of the Normal Cost are used to amortize the Unfunded Actuarial Liability.

MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2005

An **Actuarial Surplus** exists if the Actuarial Value of Assets exceeds the Actuarial Liability. The calculation of the Unfunded Actuarial Liability or Actuarial Surplus is shown in **TABLE 4** and summarized below.

(\$000)	2005 Actuarial Valuation	2004 Actuarial Valuation
Actuarial Liability	\$ 56,414	\$ 50,310
Actuarial Value of Assets	<u>50,961</u>	<u>45,210</u>
Unfunded Actuarial Liability or (Actuarial Surplus)	\$ 5,453	\$ 5,100
 Funded Ratio – Actuarial Value	 90%	 90%
 Funded Ratio – Market Value	 92%	 90%

The **Funded Ratio** is equal to the Actuarial Value of Assets divided by the Actuarial Liability. A funded Ratio of 100% means the Actuarial Value of Assets equals the Actuarial Liability, and the System could be financed by contributions equal to the Normal Cost, if all future experience emerges as assumed.

A Funded Ratio over 100% indicates the System has an Actuarial Surplus.

ACTUARIAL GAINS AND LOSSES

Comparing the Unfunded Actuarial Liability as of two valuation dates does not provide enough information to determine if there were actuarial gains or losses. The correct comparison is between the Unfunded Actuarial Liability on the valuation date and the Expected Unfunded Actuarial Liability projected from the prior valuation date using the actuarial assumptions in effect for the one-year period.

TABLE 5 shows the Actuarial Liability as of June 30, 2004, and the elements to project that figure forward to June 30, 2005: the Normal Cost, less benefits paid, plus a charge for interest at the assumed rate of 8% per year. The same table shows the Actuarial Value of Assets as of June 30, 2004, and the elements to project that figure forward to June 30, 2005: The net cash flow (contributions less benefits and expenses), plus a charge for interest at the assumed rate of 8%.

The following is a summary of the actuarial gains or losses during the one-year period.

MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2005

	(\$000)
Unfunded Actuarial Liability	
Actual as of June 30, 2004	\$ 5,100
Expected as of June 30, 2005	\$ 4,374
Actual as of June 30, 2005	<u>5,453</u>
Actuarial (Gain) or Loss	\$ 1,079
(Gain) or Loss by Source	
Investment (Gain) or Loss	\$ 908
Liability (Gain) or Loss	<u>171</u>
Net from All Sources	\$ 1,079

CALCULATION OF CONTRIBUTION RATE

The statutory funding rate is tested in the valuation to determine if it is sufficient to cover the Normal Cost Rate plus an amortization payment for the Unfunded Actuarial Liability, if any, over no more than 30 years. The calculations are shown in **TABLE 6** and summarized below.

Rates as a Percentage of Active Member Payroll	2005 Actuarial Valuation	2004 Actuarial Valuation
Statutory Funding Rate	19.56%	19.56%
Normal Cost Rate	<u>18.56</u>	<u>18.54</u>
Available for Amortization	1.00%	1.02%
UAL (Surplus) (\$000)	\$5,453	\$5,100
Years to Amortize	49.5	45.9
30-Year Rate of Amortization	1.26%	1.25%

Based on the current Actuarial Value of Assets and all future experience emerging as assumed, the Unfunded Actuarial Liability will not be amortized over the next 30 years. We have, therefore, calculated the additional revenue needed to amortize the Unfunded Actuarial Liability over 30 years.

Calculated Contribution Rate		
Normal Cost Rate	18.56%	18.54%
Rate of Amortization	<u>1.26</u>	<u>1.25</u>
Total Contribution Rate	19.82%	19.79%
Current Statutory Rate	19.56%	19.56%
Estimated Shortfall or (Surplus)	0.26%	0.23%

MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2005

DISCLOSURE INFORMATION - GASB No. 25

The disclosure of the Schedule of Funding Progress calculated in accordance with Statement No. 25 of the Governmental Accounting Standards Board and is shown in **TABLES 7 AND 8**.

The Annual Required Contribution was 19.79% for the 2004 –2005 fiscal year.

MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2005

SECTION 3
ACTUARIAL VALUATION RESULTS

The following tables document the findings of the actuarial valuation.

TABLE 1	NORMAL COSTS
TABLE 2	SUMMARY OF ACTUARIAL REQUIREMENTS
TABLE 3	ACTUARIAL VALUE OF ASSETS
TABLE 4	UNFUNDED ACTUARIAL LIABILITY OR ACTUARIAL SURPLUS
TABLE 5	ACTUARIAL GAINS AND LOSSES
TABLE 6	CALCULATION OF CONTRIBUTION RATE
TABLE 7	SCHEDULE OF FUNDING PROGRESS
TABLE 8	SOLVENCY TEST

MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2005

TABLE 1
NORMAL COSTS

	<u>2005 Actuarial Valuation</u>	<u>2004 Actuarial Valuation</u>
Normal Cost Rate		
Service Retirement	10.79%	10.76%
Disability Retirement	0.70	0.71
Death	1.12	1.13
Withdrawal	<u>5.95</u>	<u>5.94</u>
Total Normal Cost Rate	18.56%	18.54%
 Annual Normal Cost (\$000)	 \$ 4,230	 \$ 3,981
 Present Value of Future Normal Costs (\$000)	 \$ 34,583	 \$ 33,246

MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2005

TABLE 2
SUMMARY OF ACTUARIAL REQUIREMENTS

(\$000)	2005 Actuarial Valuation	2004 Actuarial Valuation
Retired Members		
Service Retirement	\$ 14,526	\$ 13,617
Disability Retirement	1,719	1,715
Beneficiaries	<u>2,292</u>	<u>1,580</u>
Retired Member Total	\$ 18,537	\$ 16,912
Inactive Members	\$ 1,062	\$ 1,122
Active Members		
Service Retirement	\$ 49,517	\$ 44,755
Disability Retirement	2,689	2,506
Pre-retirement Death	2,855	2,817
Withdrawal	<u>16,337</u>	<u>15,444</u>
Active Member Total	\$ 71,398	\$ 65,522
Present Value of Future Projected Benefits	\$ 90,997	\$ 83,556
Present Value of Future Normal Costs	<u>34,583</u>	<u>33,246</u>
Actuarial Liability	\$ 56,414	\$ 50,310

MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2005

TABLE 3
ACTUARIAL VALUE OF ASSETS
(\$000)

Fiscal Year	Cash Flow	Expected Value	Gain or (Loss)	Market Value
2001-02				\$ 32,456
2002-03	\$ 2,457	\$ 37,607	\$ (179)	37,429
2003-04	2,771	43,305	1,941	45,246
2004-05	2,925	51,908	(82)	51,826

Fiscal Year	Gain or (Loss)	Reserve Factor	Smoothing Reserve
2002-03	\$ (179)	25%	\$ (45)
2003-04	1,941	50%	971
2004-05	(82)	75%	<u>(61)</u>
			\$ 865

Fair Market Value on June 30, 2005	\$ 51,826
Less, Asset Smoothing Reserve	<u>(865)</u>
Actuarial Value of Assets on June 30, 2005	\$ 50,961

MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2005

TABLE 4
UNFUNDED ACTUARIAL LIABILITY OR ACTUARIAL SURPLUS

(\$000)	2005 Actuarial Valuation	2004 Actuarial Valuation
<u>Actuarial Value</u>		
Actuarial Liability	\$ 56,414	\$ 50,310
Actuarial Value of Assets	<u>50,961</u>	<u>45,210</u>
Unfunded Actuarial Liability or (Actuarial Surplus)	\$ 5,453	\$ 5,100
Funded Ratio (AV)	90%	90%
<u>Market Value</u>		
Actuarial Liability	\$ 56,414	\$ 50,310
Market Value of Assets	<u>51,826</u>	<u>45,246</u>
Unfunded Actuarial Liability or (Actuarial Surplus)	\$ 4,588	\$ 5,064
Funded Ratio (MV)	92%	90%

**MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2005**

**TABLE 5
ACTUARIAL GAINS AND LOSSES**

(\$000)	<u>Expected</u>	<u>Actual</u>	<u>(Gain) or Loss</u>
2004 Actuarial Liability	\$ 50,310		
Normal Cost	3,981		
Benefits Paid	(2,146)		
Expected Earnings at 8%	<u>4,098</u>		
Actuarial Liability	\$ 56,243	\$ 56,414	\$ 171
 2004 Actuarial Value of Assets	 \$ 45,210		
Net Cash Flow	2,925		
Expected Earnings at 8%	<u>3,734</u>		
Actuarial Value of Assets	<u>51,869</u>	<u>50,961</u>	<u>908</u>
 Unfunded Actuarial Liability or (Actuarial Surplus) as of June 30, 2005	 \$ 4,374	 \$ 5,453	 \$ 1,079

Summary Actuarial (Gain) or Loss by Source

Investment (Gain) or Loss	\$ 908
Liability (Gain) or Loss	<u>171</u>
Total Actuarial (Gain) or Loss	\$ 1,079

MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2005

TABLE 6
CALCULATION OF CONTRIBUTION RATE

	<u>2005 Actuarial Valuation</u>	<u>2004 Actuarial Valuation</u>
Statutory Funding Rate		
Members	10.56%	10.56%
Employers	<u>9.00</u>	<u>9.00</u>
Total	19.56%	19.56%
Normal Cost Rate	<u>18.56</u>	<u>18.54</u>
Funding Rate Available for Amortization	1.00%	1.02%
Unfunded Actuarial Liability (Surplus) (\$000)	\$ 5,453	\$ 5,100
Years to Amortize at Statutory Funding Rate	49.5	45.9
30-Year Rate of Amortization Contribution or (Credit)	1.26%	1.25%
Calculated Contribution Rate		
Normal Cost Rate	18.56%	18.54%
30-Year Amortization Payment	<u>1.26</u>	<u>1.25</u>
Total Calculated Rate	19.82%	19.79%
Shortfall or (Surplus) in Statutory Funding Rate	0.26%	0.23%

MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2005

DISCLOSURE INFORMATION - GASB No. 25

TABLE 7
SCHEDULE OF FUNDING PROGRESS
(DOLLARS IN THOUSANDS)

Actuarial Valuation Date	Actuarial Value of Assets	Actuarial Accrued Liability (AAL)	Funded Ratio	Unfunded AAL (UAAL)	Covered Payroll	UAAL as a Percentage of Covered Payroll
June 30, 1996	18,160	17,325	105	(835)	2,762	(30)
June 30, 1998	23,190	22,412	103	(778)	7,839	(10)
June 30, 2000	32,966	23,922	138	(9,044)	11,875	(76)
June 30, 2002	38,730	39,109	99	379	17,151	2
June 30, 2004	45,210	50,310	90	5,100	21,442	24
June 30, 2005	50,961	56,414	90	5,453	22,496	24

TABLE 8
SOLVENCY TEST
(DOLLARS IN THOUSANDS)

	(1)	(2)	(3)		Coverage Ratios		
Actuarial Valuation Date	Active Member Accounts	Inactive Actuarial Liability	Employer Financed Active Liability	Actuarial Value of Assets	(1)	(2)	(3)
June 30, 1996	1,917	10,299	5,109	18,160	100	100	116
June 30, 1998	2,770	11,727	7,915	23,190	100	100	110
June 30, 2000	5,851 ⁽¹⁾	12,313	5,758	32,966	100	100	257
June 30, 2002	8,857	14,005	16,247	38,730	100	100	98
June 30, 2004	12,371	18,034	19,905	45,210	100	100	74
June 30, 2005	14,416	19,599	22,399	50,961	100	100	76

Note:

- (1) Prior to 2000, "active member accounts" included Regular Contributions without interest for active and inactive members. Beginning in 2000, "active member accounts" includes Regular and Additional Contributions with interest, and excludes all accounts of inactive members.

MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2005

SECTION 4
ACTUARIAL METHODS AND ASSUMPTIONS

This section of the report describes the actuarial methods and assumptions used in this valuation. These methods and assumptions have been chosen by the Retirement Board based on our recommendations. The Retirement Board has the sole authority to select the methods and assumptions used in this actuarial valuation. The recommendations were formed on the basis of recent experience of the System and on current expectations as to future economic conditions.

The assumptions are intended to estimate the future experience of the System and the members of the System in areas which affect the projected benefit flow and anticipated investment earnings. Any variations in future experience from that expected from these assumptions will result in corresponding changes in the estimated costs of the System's benefits.

In our opinion, the current actuarial methods and assumptions are reasonable and appropriate for this System. The assumptions were developed in accordance with generally recognized and accepted actuarial principles and practices that are consistent with applicable Standards of Practice adopted by the American Academy of Actuaries.

RECORDS AND DATA

The data used in the valuation consist of financial information and records of age, service and income of contributing members, former contributing members and their survivors. All of the data were supplied by the System and are accepted for valuation purposes without audit.

ACTUARIAL COST METHOD

A fundamental principle in financing the liabilities of a retirement program is that the cost of its benefits should be related to when they are earned, rather than when they are paid. There are a number of methods in use for making a determination.

The funding method used in this valuation is the Entry Age Cost Method. Under this method the actuarial present value of projected benefits for each individual member included in the valuation is allocated on a level basis over the earnings of the individual between entry age and assumed exit ages. The portion of this actuarial present value allocated to a valuation year is called the Normal Cost. The portion of this actuarial present value not provided for at a valuation date by the actuarial present value of future Normal Costs is called the Actuarial Liability.

The excess of the Actuarial Liability over the Actuarial Value of Assets is called the Unfunded Actuarial Liability. If the Actuarial Value of Assets exceeds the Actuarial Liability, the difference is called the Actuarial Surplus.

MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2005

ASSET VALUATION METHOD

Asset values were supplied by the System and were accepted without audit by us. The Actuarial Value of Assets is the market value, adjusted by a four-year recognition of gains and losses.

INVESTMENT RETURN

The future investment earnings of the assets of the plan are assumed to accrue at a net annual rate of 8.00%, net of all administrative and investment-related expenses.

INTEREST ON MEMBER CONTRIBUTIONS

Interest on member contributions is assumed to accrue at a net annual rate of 5.00%.

FUTURE SALARIES

Estimates of future salaries are based on two types of assumptions. Rates of increase in the general wage level of the membership are directly related to inflation, while individual salary changes due to promotion and longevity, referred to as the merit scale, occur even in the absence of inflation. The assumed increase in future salaries due to general wage growth is 4.25% per year. The merit scale, assumed in addition to general wage growth, is shown below.

<u>Service</u>	<u>Merit Scale</u>
1	7.3%
2	5.6
3	4.4
4	3.5
5	2.8
6	2.2
7	1.7
8	1.3
9	1.0
10	0.7
11-15	0.4
16-20	0.2
After 20	0.0

MORTALITY

The probabilities of mortality are based on the following published tables. We further assume that 70% of all deaths from active membership status are duty-related.

Healthy Retirees and Non-Retired Members

Males	1994 Male Uninsured Pensioner Table (-1)
Females	1994 Female Uninsured Pensioner Table

MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2005

Disabled Retirees

Males 1994 Male Uninsured Pensioner Table (+3)
 Females 1994 Female Uninsured Pensioner Table (+2)

Beneficiaries

Males 1994 Male Uninsured Pensioner Table (-1)
 Females 1994 Female Uninsured Pensioner Table (-1)

Age	Healthy Members		Beneficiaries		Disabled Retirees	
	Male	Female	Male	Female	Male	Female
50	0.250%	0.154%	0.250%	0.141%	0.385%	0.186%
55	0.428	0.247	0.428	0.224	0.677	0.314
60	0.762	0.477	0.762	0.415	1.234	0.627
65	1.391	0.929	1.391	0.819	2.135	1.157
70	2.336	1.476	2.336	1.367	3.355	1.775
75	3.661	2.439	3.661	2.192	5.399	3.050
80	6.007	4.236	6.007	3.802	8.872	5.285
85	9.636	7.284	9.636	6.557	13.654	9.035
90	14.995	12.502	14.995	11.247	21.333	15.266
95	23.194	20.023	23.194	18.352	30.675	23.619

SERVICE RETIREMENT

The assumed rates of retirement used in this valuation are shown below.

Age	w/ 20 Yrs
Under 50	-
50 - 54	5%
55	10
56	10
57	10
58	10
59	10
60 & over	100

All vested terminated members are assumed to retire when first eligible for an unreduced benefit.

MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
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DISABLEMENT

The assumed rates of disablement are illustrated below at specified ages. We further assume that 10% of all disabilities are duty-related. We also assume that all disabilities are permanent, and no disabled member will recover and return to work.

<u>Age</u>	<u>Male</u>	<u>Female</u>
22	-	-
27	0.10%	0.10%
32	0.10	0.10
37	0.10	0.10
42	0.40	0.40
47	0.40	0.40
52	0.40	0.40
57	0.40	0.40
62	0.00	0.00

OTHER TERMINATIONS OF MEMBERSHIP

The assumed rates of termination, other than for retirement, death, or disability, are shown in the following table.

<u>Service</u>	<u>All Members</u>
0	20%
1	15
2	10
3	6
4	6
5-9	5
10-14	5
15 & over	5

The probability of a terminating member electing a refund of the member account balance is shown in the following table.

<u>Age at Termination</u>	<u>Non-Vested</u>	<u>Vested</u>
Under 35	100%	70%
35 - 39	100	60
40 - 44	100	40
45 - 49	100	40
50 & over	100	-

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PROBABILITY OF MARRIAGE

100% of all non-retired members are assumed to be married. Male spouses are assumed to be four years older than female spouses.

Changes in Actuarial Assumptions Made for this Valuation

The following method and assumptions were revised since the last valuation:

Actuarial Methods

- ◆ None

Economic Assumptions

- ◆ None

Demographic Assumptions

- ◆ None

MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
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SECTION 5
SUMMARY OF BENEFIT PROVISIONS

All of the calculations contained in this report are based on our understanding of the benefit and eligibility provisions of the system. The provisions used in this valuation are summarized below for reference purposes.

Service Retirement	Eligibility:	Age 50 and 20 years of membership service.
	Benefit:	Years of service credit, multiplied by highest average compensation, multiplied by 2.50%.
	Normal Form:	Monthly benefit for the life of the member, with a death benefit equal to the remaining balance of the member's contribution account.
Early Retirement	Eligibility:	5 years of membership service and age 55
	Benefit:	Years of service credit, multiplied by highest average compensation, multiplied by 2.50%
Disability Retirement	Eligibility:	5 years of membership service, and service disablement
	Benefit:	50% of highest average compensation. If the member has more than 20 years of service credit, 2.5% of highest average compensation multiplied by years of service credit
	Eligibility:	Non-service disablement
	Benefit:	Actuarial equivalent of accrued benefit based on a retirement age of 50.
Death before Retirement	Eligibility:	Service death
	Benefit:	50% of highest average compensation. If the member has more than 25 years of service credit, 2.0% of highest average compensation multiplied by years of service credit
	Eligibility:	Non-service death
	Benefit:	Actuarial equivalent of accrued benefit based on a retirement age of 55.

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Termination Benefit	Eligibility:	Prior to 5 years of membership service
	Benefit:	Return of member contributions with interest.
	Eligibility:	5 years of membership service
	Benefit:	Either (a) or (b) below: (a) Return of member contributions with interest, or (b) Accrued benefit at age 55
Benefit Adjustments	Eligibility:	Retired members and beneficiaries
	Benefit:	An annual adjustment (GABA) of 3.0% commencing January 1 st , one year after retirement
Contributions	Members:	10.56% of members' compensation.
	Employers:	9.00% of members' compensation.

MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
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SECTION 6
SUMMARY OF MEMBERSHIP DATA

The following tables depict the participant data that was used in the valuation. Table 9 is a history of participant characteristics for the System. Table 10 displays the distribution of Active Members by age and service showing average annual salaries. Table 11 is a distribution of the retirees by age, showing average monthly benefits. Table 12 summarizes Vested Inactive Members by age.

TABLE 9
MEMBERSHIP HISTORY

	<u>2005</u>	<u>2004</u>	<u>2002</u>	<u>2000</u>	<u>1998</u>	<u>1996</u>
Active Members						
Number	711	685	609	494	327	92
Average Age	40.2	39.8	39.0	37.6	37.3	-
Average Service	5.7	5.4	4.8	4.3	4.8	-
Average Salary	\$31,711	\$31,023	\$30,102	\$26,253	\$23,973	\$29,688
Inactive Members						
Service Retirement	64	57	52	55 ⁽¹⁾	72	70
Disability Retirement	11	11	9	9 ⁽²⁾	2	1
Survivors	19	17	18	18 ⁽³⁾	4	4
Vested Deferred	22	18	9	2	2	1
Non-vested Terminated	<u>81</u>	<u>95</u>	<u>83</u>	<u>53</u>	<u>17</u>	<u>2</u>
Total Inactive Members	197	198	171	137	97	78
Total Membership	908	883	780	631	424	170

Notes:

- (1) Beginning in 2000, service retirements exclude members who originally retired on a disability, and beneficiaries of members who died after retirement.
- (2) Beginning in 2000, disability retirements include all members who originally retired on a disability, regardless of their current age.
- (3) Beginning in 2000, survivors include beneficiaries of members who died after retirement, as well as beneficiaries of members who died prior to retirement.

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TABLE 10
DISTRIBUTION OF ACTIVE MEMBERS

Age	Years of Service							
	Under 5		5 to 9		10 to 14		15 to 19	
	Number	Average Salary	Number	Average Salary	Number	Average Salary	Number	Average Salary
Under 25	37	25,541	-	-	-	-	-	-
25-29	58	27,588	12	30,817	-	-	-	-
30-34	78	27,869	33	34,217	8	35,838	1	32,823
35-39	72	28,165	36	33,612	14	37,925	1	41,805
40-44	69	28,722	35	35,648	10	42,076	5	41,919
45-49	39	27,425	27	36,094	11	35,370	10	44,006
50-54	31	31,104	23	35,552	2	37,700	4	45,254
55-59	22	27,164	24	34,964	5	34,177	3	36,510
60-64	5	28,292	2	33,997	1	41,301	-	-
65-69	-	-	1	38,135	-	-	-	-
70 & Over	1	26,417	-	-	-	-	-	-
Totals	412	27,980	193	34,685	51	37,550	24	42,284

Age	Years of Service							
	20 to 24		25 to 29		30 & Up		All Years	
	Number	Average Salary	Number	Average Salary	Number	Average Salary	Number	Average Salary
Under 25	-	-	-	-	-	-	37	25,541
25-29	-	-	-	-	-	-	70	28,142
30-34	-	-	-	-	-	-	120	30,187
35-39	-	-	-	-	-	-	123	30,981
40-44	4	44,451	-	-	-	-	123	32,827
45-49	8	43,391	3	45,472	-	-	98	34,253
50-54	2	40,913	7	47,730	-	-	69	35,569
55-59	2	38,393	-	-	1	45,255	57	32,267
60-64	-	-	-	-	3	50,191	11	36,484
65-69	-	-	-	-	1	44,661	2	41,398
70 & Over	-	-	-	-	-	-	1	26,417
Totals	16	42,721	10	47,053	5	48,098	711	31,711

MONTANA GAME WARDENS' AND PEACE OFFICERS' RETIREMENT SYSTEM
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TABLE 11
DISTRIBUTION OF RETIRED MEMBERS

Age	Service Retirees		Disabled Retirees		Survivors	
	Number	Average Monthly Benefit	Number	Average Monthly Benefit	Number	Average Monthly Benefit
Under 40	-	-	-	-	-	-
40-44	-	-	-	-	-	-
45-49	-	-	-	-	-	-
50-54	3	1,499	2	1,481	4	1,162
55-59	11	1,724	2	925	-	-
60-64	13	1,246	2	1,300	2	614
65-69	10	1,775	1	1,244	-	-
70-74	12	2,007	2	1,611	2	1,187
75-79	7	1,738	-	-	3	863
80-84	2	1,502	1	964	6	981
85-89	4	1,187	1	854	2	926
90-94	2	804	-	-	-	-
95-99	-	-	-	-	-	-
100 & over	-	-	-	-	-	-
TOTALS	64	1,610	11	1,245	19	977

TABLE 12
DISTRIBUTION OF VESTED INACTIVE MEMBERS

Age	Number
Under 30	-
30-34	3
35-39	2
40-44	11
45-49	5
50-54	1
55-59	-
60 & over	-
Total	22